

Andhra Christian college

(Day, Evening and PG)

NOTICE

Date: 22-08-2018

This is to inform you that there will be a seminar on “QUNTAM NUMBERS” tomorrow, i.e., on 23-08-2018 to be conducted by the department of physics, at 11 AM.

Dr. G. Gowri Sankar, Head Department of Physics, Hindu College, Guntur. Will be address the seminar. All the students of III B.Sc. are instructed to attend the programme without fail.



Copy to:

1. The coordinator, IQAC, Andhra Christian College
2. The office manager, Andhra Christian College

Principal

A handwritten signature in blue ink, appearing to read "G. Gowri Sankar".

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Andhra Christian College::Guntur

Department of Physics

Seminar Report on "Quantum Numbers"

Organized by:

Department of Physics, A. C. College, Guntur

Date:

23rd August 2018

Time:

11:00 a.m.

Venue:

Department of Physics, A. C. College, Guntur

1. Introduction

The Department of Physics at A. C. College, Guntur, organized a seminar on "Quantum Numbers" on the 23rd of August, 2018. The seminar was part of the department's ongoing efforts to deepen the understanding of fundamental physics concepts among faculty and students. Quantum numbers are a cornerstone of quantum mechanics and play a crucial role in explaining the behavior of subatomic particles.

The resource person for this seminar was Dr. G. Gowri Sankar, Head of the Department of Physics, Hindu College, Guntur, who is known for his expertise in quantum mechanics and atomic physics.

2. Objectives of the Seminar

The primary objectives of the seminar were:

1. To provide a comprehensive understanding of quantum numbers:
 - o Explain the concept of quantum numbers and their significance in quantum mechanics.
2. To explore the different types of quantum numbers:
 - o Detail the four quantum numbers (Principal, Azimuthal, Magnetic, and Spin) and their roles in determining the properties of electrons in atoms.
3. To discuss the application of quantum numbers in atomic structure:

- o Illustrate how quantum numbers are used to describe electron configurations and predict the chemical behavior of elements.
4. **To enhance the participants' knowledge in advanced quantum physics:**
- o Introduce participants to the implications of quantum numbers in modern physics and emerging technologies.

3. Seminar Proceedings

The seminar began at 11:00 a.m. with an opening address by the Head of the Department of Physics, A. C. College. The introduction highlighted the importance of the topic and welcomed Dr. G. Gowri Sankar to the seminar.

3.1 Lecture by Dr. G. Gowri Sankar

Dr. G. Gowri Sankar delivered an in-depth lecture covering the following topics:

Fundamental Concepts of Quantum Numbers:

- o Dr. Sankar began by defining quantum numbers and explaining their importance in quantum mechanics as descriptors of the quantized states of electrons in an atom.

Types of Quantum Numbers:

- o **Principal Quantum Number (n):** Describes the energy level of an electron.
- o **Azimuthal Quantum Number (l):** Determines the shape of the electron's orbital.
- o **Magnetic Quantum Number (m_l):** Indicates the orientation of the orbital in space.
- o **Spin Quantum Number (m_s):** Represents the spin of the electron, a fundamental property affecting its magnetic moment.

Pauli Exclusion Principle:

- o The principle that no two electrons in an atom can have identical quantum numbers was discussed, emphasizing its role in electron configuration and atomic stability.

Applications of Quantum Numbers in Physics:

- o Dr. Sankar provided examples of how quantum numbers are applied in various fields, including atomic physics, quantum chemistry, and quantum computing.

3.2 Interactive Session

An interactive session followed the lecture, during which participants asked questions and engaged in discussions about the complexities of quantum numbers. Dr. Sankar's clear explanations helped demystify challenging concepts, making the session highly productive.

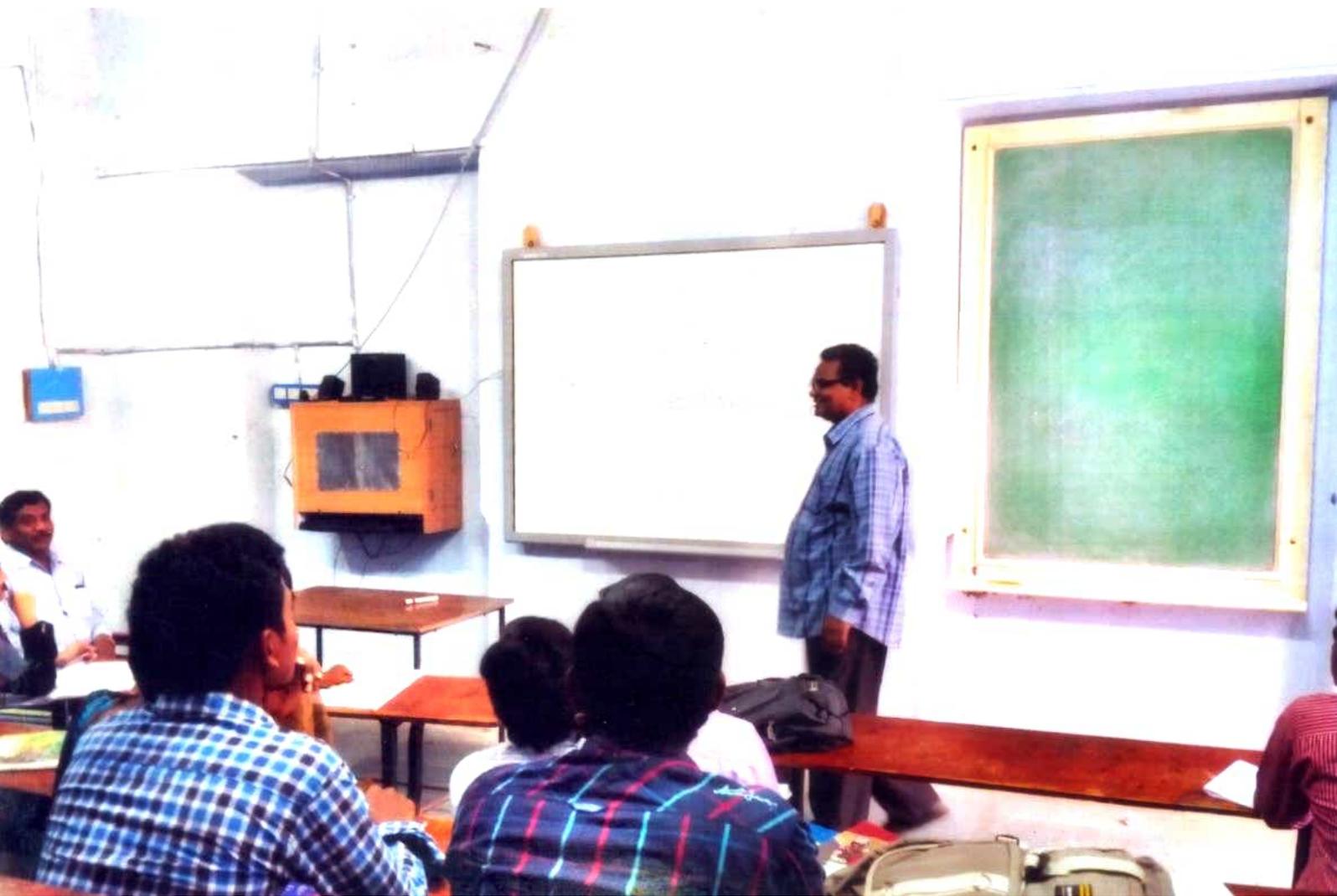
4. Outcomes of the Seminar

The seminar successfully met its objectives and yielded the following outcomes:

1. **Enhanced Understanding:**
 - o Participants gained a thorough understanding of the concept of quantum numbers and their significance in quantum mechanics.
2. **Clarification of Complex Concepts:**
 - o The seminar clarified complex topics related to quantum numbers, particularly the Pauli Exclusion Principle and its implications for atomic structure.
3. **Increased Academic Interest:**
 - o The seminar stimulated interest among students and faculty members in further exploring quantum mechanics and its applications in modern physics.
4. **Practical Insights:**
 - o The application of quantum numbers in understanding atomic structure and behavior was effectively conveyed, helping participants appreciate their relevance in both theoretical and applied physics.

5. Conclusion

The seminar on "Quantum Numbers" was a resounding success, achieving its goals of educating and inspiring participants. Dr. G. Gowri Sankar's expertise and engaging presentation style contributed significantly to the seminar's impact. The Department of Physics at A. C. College, Guntur, looks forward to organizing more such events to continue fostering a deep understanding of fundamental and advanced topics in physics.



Andhra Christian College, Guntur

Department of Physics

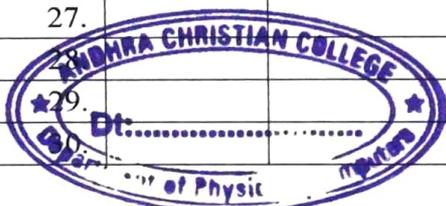
List of Students Attended for SEMINAR CLASS

TOPIC: Quantum Numbers

Date: 23.08.18

Class: IIIrd B.Sc

S. No.	Class No	Name of the Students	Signature
1.	602.	K. Bangaru Rani	K. Bangaru Rani
2.	610.	K. Amara Rama Krishna	K. Amara Rama Krishna
3.	612.	T. Naveen Kumar	T. Naveen Kumar
4.	615.	E. Trivikram	E. Trivikram
5.	617.	S. Gopinadh	S. Gopinadh
6.	619.	R. Vamsi	R. Vamsi
7.	620	L. Chinnam Naidu	L. Chinnam Naidu
8.	622.	A. Vijay Kumar	A. Vijay Kumar
9.	625.	Y. Vasa Kumar	Y. Vasa Kumar
10.	628.	K. Mahesh Babu	K. Mahesh Babu
11.	630.	K. Madhu Babu	K. Madhu Babu
12.	633.	K. Prem Kumar	K. Prem Kumar
13.	635.	K. Narendra Babu	K. Narendra Babu
14.	638.	M. Pavan Kalyan Nayak	M. Pavan Kalyan Nayak
15.	640.	D. Naga Babu	D. Naga Babu
16.	642.	P. Arun Kumar	P. Arun Kumar
17.	643.	B. Nagaraju	B. Nagaraju
18.	644.	D. Esi Babu	D. Esi Babu
19.	702.	S.K. Nagur Babu	S.K. Nagur Babu
20.	703.	A. Ravi Teja	A. Ravi Teja
21.	705.	D. Naveen Kumar	D. Naveen Kumar
22.	708	V. Anand	V. Anand
23.	709.	M. Prasanna Kumar	M. Prasanna Kumar
24.	710.	T. Gopi Raju	T. Gopi Raju
25.	711.	G. Ganesh	G. Ganesh
26.			
27.			
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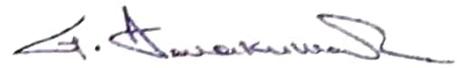
Date: 16-07-2019

This is to inform you that there will be a seminar on “**MAGNITISM AND MATTER**” tomorrow, i.e., on 17-07-2019 to be conducted by the department of physics, at 11 AM.

N. Lalitha Prasad, Lecturer Department of Physics, Hindu College, Guntur Will be address the seminar.

All the students of III B.Sc. are instructed to attend the programme without fail.




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Department of Physics

Seminar Report on "Magnetism and Matter"

Organized by: Department of Physics, Andhra Christian College, Guntur

Date: 17th July 2019

Time: 11:00 AM

Venue: Department of Physics, Andhra Christian College, Guntur

Resource Person: Mr. N. Lalitha Prasad, Faculty of Physics, Hindu College, Guntur

Participants: B.Sc. students, Faculty: Dr. M. Ratna Raju (Head), Dr. P. M. Vinaya Teja (Senior Lecturer), Mr. V. Ravi Kumar (Lecturer), Mr. D. Srinivasa Rao (Lecturer)

1. Introduction

The Department of Physics, Andhra Christian College, Guntur, organized a seminar on "Magnetism and Matter" on 17th July 2019. The seminar was designed to deepen B.Sc. students' understanding of the fundamental principles of magnetism and its interaction with matter. The session was led by Mr. N. Lalitha Prasad, an experienced Faculty of Physics from Hindu College, Guntur, who provided valuable insights into the subject.

2. Objectives of the Seminar

The seminar was conducted with the following key objectives:

- **To introduce the basic concepts of magnetism:** The seminar aimed to explain the foundational principles of magnetism, including magnetic fields, magnetic forces, and magnetic moments.
- **To explore the interaction between magnetism and matter:** Participants were introduced to how different materials respond to magnetic fields, including discussions on diamagnetism, paramagnetism, and ferromagnetism.
- **To explain the properties of magnetic materials:** The seminar aimed to cover the properties and classifications of magnetic materials, focusing on their applications in technology and industry.
- **To discuss the Earth's magnetism:** The seminar sought to provide an understanding of geomagnetism, the Earth's magnetic field, and its significance in navigation and geology.
- **To encourage academic research in magnetism:** The seminar aimed to inspire students to pursue further studies and research in magnetism, emphasizing its importance in both theoretical and applied physics.

3. Summary of the Seminar

The seminar began with a welcome address by Dr. M. Ratna Raju, Head of the Department of Physics, who introduced the resource person, Mr. N. Lalitha Prasad, and highlighted the

relevance of the topic. Mr. Prasad started the session with a brief overview of the history of magnetism, tracing its discovery and the evolution of magnetic theory over the centuries.

Mr. Prasad then introduced the basic concepts of magnetism, explaining the nature of magnetic fields, the origin of magnetic forces, and how magnetic moments arise in atoms. He discussed the distinction between magnetic monopoles and dipoles, and how these concepts underpin the understanding of magnetic phenomena.

The seminar progressed into a detailed exploration of the interaction between magnetism and matter. Mr. Prasad explained the different types of magnetic materials—diamagnetic, paramagnetic, and ferromagnetic—and their distinct behaviours in the presence of magnetic fields. He also provided practical examples of each type of material, highlighting their everyday applications, such as in magnetic storage devices, transformers, and electronic components.

A significant part of the seminar was dedicated to the discussion of geomagnetism. Mr. Prasad explained the Earth's magnetic field, its causes, and its impact on navigation systems, such as compasses. He also touched upon the concept of magnetic declination and its importance in accurate navigation.

The session concluded with a discussion on the latest advancements in magnetism research, including the development of new magnetic materials and their potential applications in cutting-edge technologies like spintronics and quantum computing. Throughout the seminar, students and faculty were actively engaged in discussions, asking questions, and sharing insights.

4. Outcomes of the Seminar

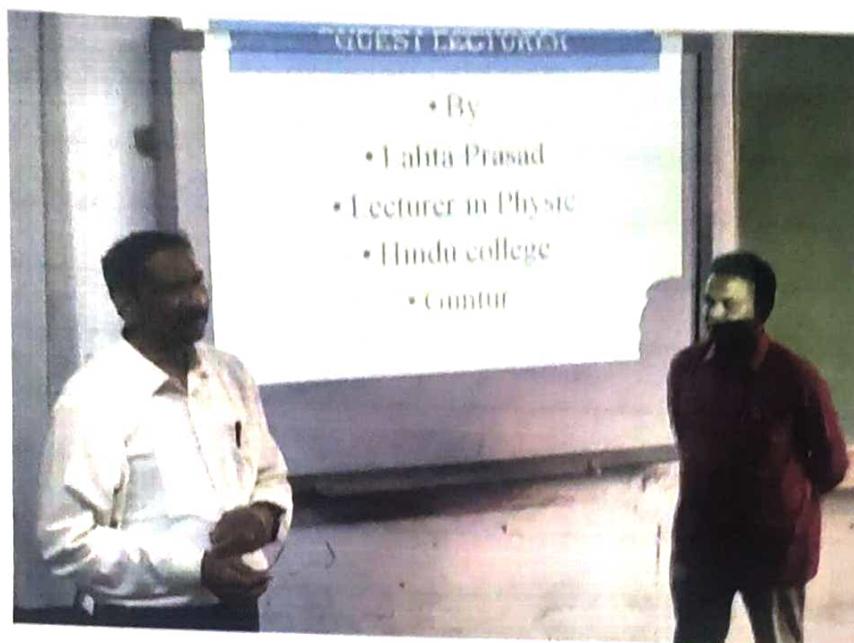
The seminar successfully achieved its objectives, resulting in the following outcomes:

- **Improved understanding of magnetism:** Participants gained a comprehensive understanding of the fundamental principles of magnetism and how it interacts with different types of matter.
- **Insight into magnetic materials:** Students learned about the properties and applications of various magnetic materials, enhancing their knowledge of material science and its technological implications.
- **Awareness of geomagnetism:** The discussion on the Earth's magnetic field provided students with a deeper appreciation of the role of magnetism in navigation and geological processes.
- **Increased interest in research:** The seminar sparked curiosity among students, encouraging them to explore research opportunities in magnetism and related fields, such as material science and applied physics.
- **Enhanced academic interaction:** The seminar facilitated closer interaction between students and faculty members, fostering a collaborative learning environment that supports further inquiry and discussion.

5. Conclusion

The seminar on "Magnetism and Matter" organized by the Department of Physics, Andhra Christian College, Guntur, was a highly informative and successful event. Mr. N. Lalitha

Prasad delivered a detailed and engaging presentation that effectively communicated both the theoretical and practical aspects of magnetism. The seminar met its objectives, providing participants with valuable knowledge and insights, and inspiring further academic exploration in the field of magnetism.



Andhra Christian College, Guntur

Department of Physics

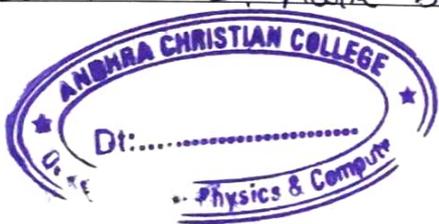
List of Students Attended for SEMINAR CLASS

TOPIC: Magnetism and matter

Date: 17.8.19

Class: IIIrd BSc

S. No.	Class No	Name of the Students	Signature
1.	601	T. Divya Bharathi	T. Divya Bharathi
2.	602	SK. Shakeena	SK. Shakeena
3.	603	D. Priya geeta Reddy	D. priya geetha Reddy
4.	604	M. Anusha	M. Anusha
5.	605	M. Nakshatram	M. Nakshatram
6.	606	D. kiran Bedi	D. kiran Bedi
7.	607	B. Sharani	B. Sharani
8.	608	k. Saibabu	k. saibabu
9.	609	k. Sri kanth	k. srikanth
10.	610	K. Siva Sankar	K. Siva Sankar
11.	611	T. Devasahayam	T. Devasahayam
12.	612	D. Sunny kumar	D. sunny kumar
13.	613	P. Anil	P. Anil.
14.	614	D. Prasanth kumar	D. Prasanth kumar
15.	615	J. Buji	J. Buji
16.	616	D. Satish babu	Satish babu
17.	617	G. Siva	G. Siva
18.	618	T. Bharath	T. Bharath.
19.	619	D. Badri	D. Badri
20.	620	V. Revanth kumar	V. Revanth kumar
21.	621	M. Pitchaiah	M. Pitchaiah
22.	622	D. Nageswama Rao.	D. Nageswama Rao
23.	623	B. Raju	B. Raju
24.	624	B. Pavan kumar	B. Pavan kumar
25.	625	k. Ramesh	k. Ramesh.
26.	626	P. joji babu	P. joji babu
27.	627	ch. Vinod kumar	Ch. vinod kumar
28.	628	T. Venkateswarlu	T. Venkateswarlu
29.	629	k. Gopi Krishna	k. Gopi Krishna
30.	630.	D. Manik babu.	D. manik babu



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 A.C. College, Guntur.

Andhra Christian college

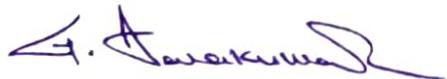
(Day, Evening and PG)

NOTICE

Date: 13-10-2019

This is to inform you that there will be a seminar on "SUPER CONDUCTIVITY" tomorrow, i.e., on 14-10-2019 to be conducted by the department of physics, at 11 AM. Sanivarapu Ravi Kumar, Lecturer Department of Physics, Hindu College, Guntur. Will be address the seminar. All the students of III B.Sc. are instructed to attend the programme without fail.




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2. The office manager, Andhra Christian College

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Department of Physics

Seminar Report on "Superconductivity"

Organized by: Department of Physics, Andhra Christian College, Guntur

Date: 14 – 10 – 2019

Time: 11:00 AM

Venue: Room No. 83, Department of Physics

Resource Person: Mr. S. Ravi Kumar, Lecturer in Physics, Hindu College, Guntur

Participants: Teaching Faculty of the Department of Physics and B.Sc. students

1. Introduction

The Department of Physics, Andhra Christian College, Guntur, organized a seminar on "Superconductivity" on 14th October 2019. The seminar was aimed at providing B.Sc. students with a deeper understanding of the fundamental principles of superconductivity, its applications, and recent advancements in the field. The session was conducted by Mr. S. Ravi Kumar, a distinguished lecturer in Physics from Hindu College, Guntur, who brought his expertise and experience to the topic.

2. Objectives of the Seminar

The primary objectives of the seminar were:

- **To introduce the concept of superconductivity:** The seminar aimed to explain the fundamental principles of superconductivity, including the phenomenon of zero electrical resistance and the expulsion of magnetic fields in certain materials when cooled below a critical temperature.
- **To explore the history and development of superconductivity:** The seminar provided an overview of the discovery of superconductivity by Heike Kamerlingh Onnes in 1911 and the subsequent developments in the field.
- **To discuss the types of superconductors:** Participants were introduced to different types of superconductors, including Type I and Type II superconductors, and their respective properties.
- **To highlight the practical applications of superconductivity:** The seminar aimed to show the practical applications of superconductivity in various fields, such as in the development of MRI machines, maglev trains, and particle accelerators.
- **To encourage academic inquiry and research:** The seminar aimed to inspire students and faculty to delve deeper into the study of superconductivity and explore potential research opportunities in the field.

3. Summary of the Seminar

The seminar began with an introduction by the Head of the Department of Physics, who welcomed the resource person, Mr. S. Ravi Kumar, and the participants. Mr. Ravi Kumar

then commenced the session with a detailed explanation of the basic principles of superconductivity, including the concept of critical temperature and the Meissner effect.

He went on to discuss the historical background of superconductivity, citing key experiments and discoveries that have shaped our current understanding of the phenomenon. The seminar then moved into a more technical discussion of the different types of superconductors, focusing on their unique properties and the conditions under which they exhibit superconductivity.

Mr. Ravi Kumar also emphasized the practical applications of superconductors in modern technology, highlighting their role in advancing medical imaging, transportation, and research in fundamental physics. The session was interactive, with students and faculty members posing questions and engaging in discussions on various aspects of superconductivity.

4. Outcomes of the Seminar

The seminar successfully achieved its objectives, and the outcomes were as follows:

- **Enhanced understanding of superconductivity:** Participants gained a comprehensive understanding of the principles and applications of superconductivity, which is essential for their academic and professional growth.
- **Increased interest in advanced studies:** The seminar sparked interest among students to pursue further studies and research in the field of superconductivity and related areas.
- **Strengthened collaboration between institutions:** The event facilitated collaboration and exchange of knowledge between Andhra Christian College and Hindu College, fostering a stronger academic relationship.
- **Encouraged research initiatives:** Faculty members were motivated to explore research opportunities in superconductivity, potentially leading to new projects and collaborations.

5. Conclusion

The seminar on "Superconductivity" organized by the Department of Physics, Andhra Christian College, Guntur, was a significant academic event that provided valuable insights into a complex and fascinating area of physics. The resource person, Mr. S. Ravi Kumar, delivered an informative and engaging presentation that was well-received by both students and faculty. The seminar successfully met its objectives, leaving participants with a deeper appreciation of the subject and encouraging further academic pursuits in the field.



Andhra Christian College, Guntur

Department of Physics

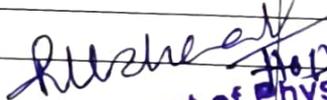
List of Students Attended for SEMINAR CLASS

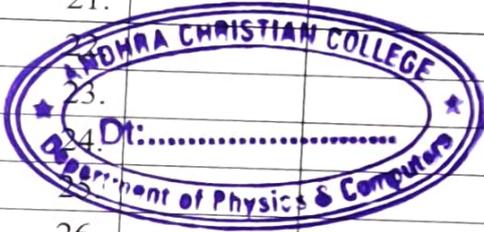
TOPIC: Super conductivity

Date: 10-10-2019

Class: IIIrd BSc

S. No.	Class No	Name of the Students	Signature
1.	609	K. Siva Sankar	K. Siva Sankar
2.	613	P. Anil	P. Anil
3.	618	G. Siva	G. Siva
4.	621	V. Revanth Kumar	V. Revanth kumar
5.	625	B Raju	B. Raju
6.	628	K. Ramesh	K. Ramesh
7.	629	P. Toji Babu	P. Toji babu
8.	630	Ch. Vinod Kumar	Ch. Vinod kumar
9.	632	K. Gopi Krishna	K. Gopi Krishna
10.	633	D. Mani	D. Mani
11.	643	T. Mani Raj	T. Mani Raj
12.	1401	K. Anand Paul	K. Anand paul
13.	1404	P. Mahesh	P. Mahesh
14.	1405	S. Chaitanya	S. Chaitanya
15.	1406	N. Venkat Rao	N. Venkat Rao
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A.C. College, Guntur.



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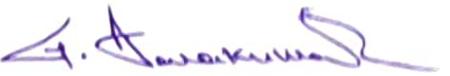
NOTICE

Date: 21-12-2019

This is to inform you that there will be a seminar on "**MOVING CHARGES AND MAGNETISM**" tomorrow, i.e., on 22-12-2019 to be conducted by the department of physics, at 11 AM. DR. D.V. Raghu Ram, Lecturer Department of Physics, Hindu College, Guntur Will be address the seminar.

All the students of III B.Sc. are instructed to attend the programme without fail.




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2. The office manager, Andhra Christian College

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Department of Physics

Seminar Report on "Moving Charges and Magnetism"

Organized by: Department of Physics, Andhra Christian College, Guntur

Date: 22-12-2019

Time: 11:00 AM

Venue: Department of Physics, Andhra Christian College, Guntur

Resource Person: Dr. D. V. Raghu Ram, Lecturer in Physics, Hindu College, Guntur

Participants: B.Sc. students and faculty of the Department of Physics

1. Introduction

The Department of Physics, Andhra Christian College, Guntur, organized an insightful seminar on the topic "Moving Charges and Magnetism" on 22nd December 2019. The seminar was aimed at enhancing the understanding of B.Sc. students regarding the fundamental concepts of electromagnetism, specifically focusing on the relationship between moving charges and magnetic fields. The session was conducted by Dr. D. V. Raghu Ram, a respected Lecturer in Physics from Hindu College, Guntur, known for his expertise in the field.

2. Objectives of the Seminar

The seminar had the following key objectives:

- **To introduce the concept of moving charges and magnetism:** The seminar aimed to explain the fundamental relationship between electric currents and magnetic fields, including the Biot-Savart law and Ampere's Circuital law.
- **To explore the principles of electromagnetism:** Participants were introduced to the principles governing the interaction of moving charges with magnetic fields, including the force experienced by a charged particle in a magnetic field (Lorentz force).
- **To demonstrate the applications of magnetism in technology:** The seminar aimed to illustrate the practical applications of magnetism in various technological advancements, such as in the functioning of electric motors, generators, and transformers.
- **To encourage critical thinking and problem-solving:** The seminar aimed to develop the problem-solving skills of students by discussing real-world scenarios where the concepts of moving charges and magnetism are applied.
- **To foster academic curiosity and research interest:** The seminar sought to inspire students and faculty to delve deeper into the study of electromagnetism and its applications, encouraging future research and exploration in the field.

3. Summary of the Seminar

The seminar began with an opening address by the Head of the Department of Physics, who welcomed Dr. D. V. Raghu Ram and the participants. Dr. Raghu Ram then initiated the session by introducing the fundamental concepts of moving charges and their interaction with magnetic fields. He explained the Biot-Savart law and Ampere's Circuital law, which describe how moving charges create magnetic fields and how these fields are structured.

Dr. Raghu Ram provided a detailed explanation of the Lorentz force, illustrating how a charged particle experiences a force when it moves through a magnetic field. The seminar also covered the concept of magnetic field lines and their significance in visualizing the direction and strength of magnetic fields.

The resource person further elaborated on the practical applications of these principles, particularly in the design and operation of electric motors, generators, and transformers. These examples helped students understand the relevance of electromagnetism in everyday technology.

Throughout the seminar, students were encouraged to ask questions and engage in discussions, which fostered an interactive learning environment. Dr. Raghu Ram also presented several problem-solving scenarios, allowing students to apply the concepts they had learned to real-world situations.

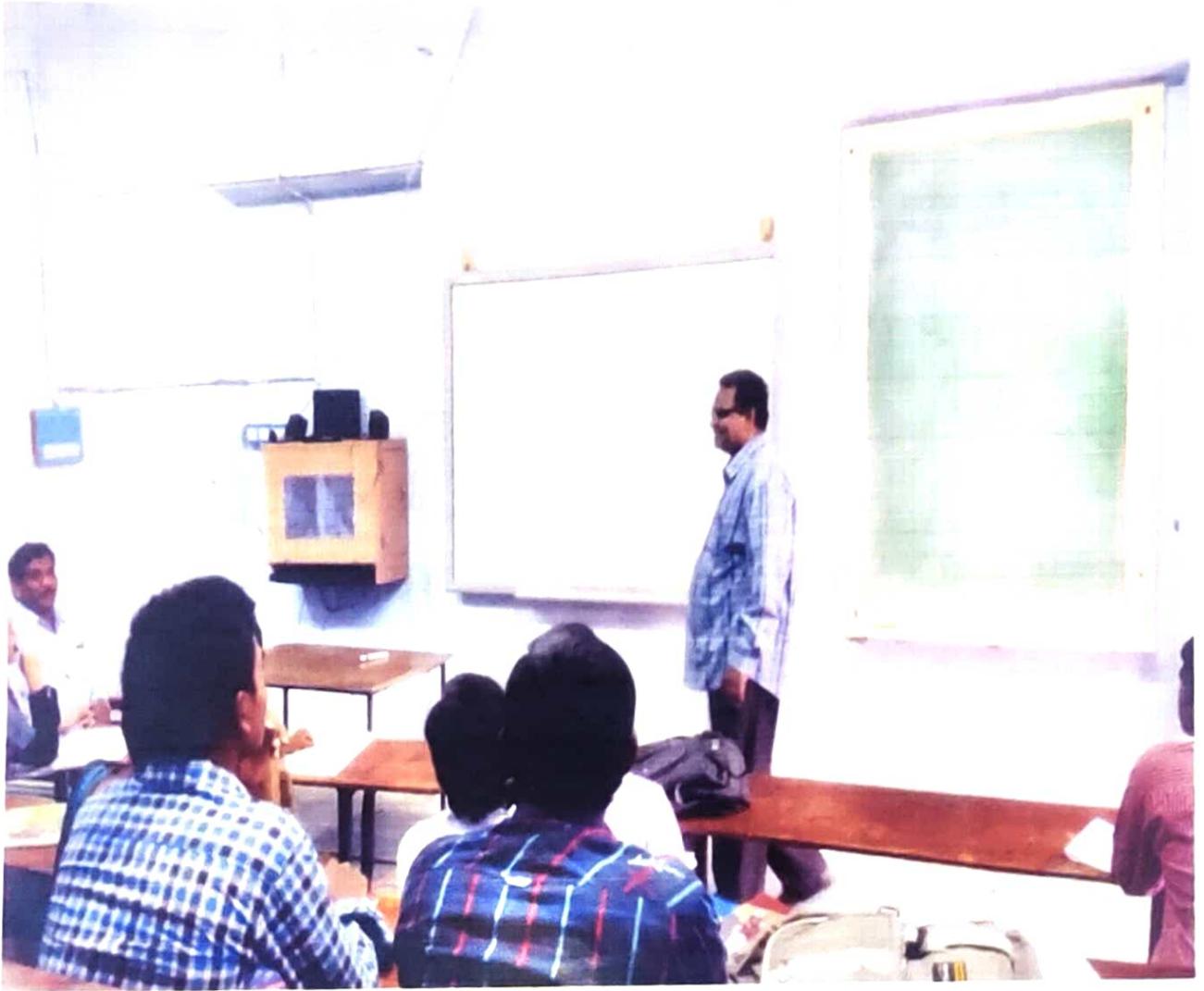
4. Outcomes of the Seminar

The seminar successfully achieved its objectives, resulting in the following outcomes:

- **Enhanced understanding of electromagnetism:** Students gained a deeper understanding of the relationship between moving charges and magnetic fields, which is crucial for their academic development in physics.
- **Improved problem-solving skills:** Through interactive discussions and problem-solving exercises, students were able to apply theoretical concepts to practical situations, enhancing their analytical abilities.
- **Increased interest in advanced physics topics:** The seminar sparked curiosity among students to explore more advanced topics in electromagnetism and related fields.
- **Encouraged faculty-student interaction:** The seminar provided an opportunity for students to engage with faculty members and the resource person, fostering a collaborative academic environment.
- **Potential research initiatives:** The seminar inspired faculty and students to consider potential research projects in electromagnetism, contributing to the academic growth of the department.

5. Conclusion

The seminar on "Moving Charges and Magnetism" organized by the Department of Physics, Andhra Christian College, Guntur, was a highly educational and engaging event. Dr. D. V. Raghu Ram delivered an informative presentation that successfully conveyed complex concepts in an accessible manner. The seminar met its objectives, leaving participants with a solid understanding of the topic and a renewed interest in the study of electromagnetism.



Andhra Christian College, Guntur

Department of Physics

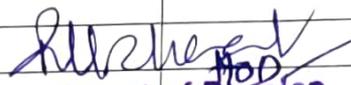
List of Students Attended for SEMINAR CLASS

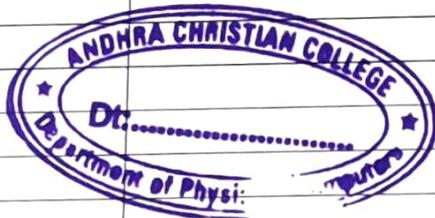
TOPIC: Moving Charges and Magnetism

Date: 22.12.19

Class: IIIrd BSc

S. No.	Class No	Name of the Students	Signature
1.	601	T. Divaya Bharathi	T. Divaya Bharathi
2.	602	S.K. Shaikhan	S.K. Shaikhan
3.	603	T. Priya Geetha Reddy	T. Priya Geetha Reddy
4.	604	M. Anusha	M. Anusha
5.	605	D. Kiran Badi	D. Kiran Badi
6.	608	K. Saibabu	K. Saibabu
7.	610	K. Siva Sankar	K. Siva Sankar
8.	611	I. Deva Sahayam	I. Deva Sahayam
9.	612	D. Sunny Kumar	D. Sunny Kumar
10.	613	P. Anil	P. Anil
11.	614	D. Prajanth Kumar	D. Prajanth Kumar
12.	615	J. Bujji	J. Bujji
13.	620	D. Badri	D. Badri
14.	628	K. Ramesh	K. Ramesh
15.	645	B. AJAY BABU.	B. AJAY BABU.
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Department of Physics
A.C. College, Guntur.



Andhra Christian college

(Day, Evening and PG)

NOTICE

Date: 14-09-2022

This is to inform you that there will be a seminar on “**LOW TEMPERATUR PHYSICS**” tomorrow, i.e., on 15-09-2022 to be conducted by the department of physics, at 11 AM. P. M. Prasad, Lecturer Department of Physics, Hindu College, Guntur Will be address the seminar. All the students of III B.Sc. are instructed to attend the programme without fail.



Copy to:

1. The coordinator, IQAC, Andhra Christian College
2. The office manager, Andhra Christian College


Principal
PRINCIPAL
ANDHRA CHRISTIAN COLLEGE
(Day, Evening & P.G)
GUNTUR

Andhra Christian College::Guntur

Department of Physics

Seminar Report on "Low Temperature Physics"

Organized by: Department of Physics, Andhra Christian College, Guntur

Date: 15th September 2022

Time: 11:00 AM

Venue: Department of Physics, Andhra Christian College, Guntur

Resource Person: Mr. P. M. Prasad, Faculty of Physics, Hindu College, Guntur

Participants: B.Sc. students, Faculty: Dr. M. Ratna Raju (Head), Dr. P. M. Vinaya Teja (Senior Lecturer), Mr. V. Ravi Kumar (Lecturer), Mr. D. Srinivasa Rao (Lecturer)

1. Introduction

The Department of Physics, Andhra Christian College, Guntur, organized a seminar on "Low Temperature Physics" on 15th September 2022. The seminar aimed to provide B.Sc. students with an understanding of the principles, phenomena, and applications associated with low-temperature physics. The session was led by Mr. P. M. Prasad, a knowledgeable Faculty of Physics from Hindu College, Guntur, who brought significant expertise to the topic.

2. Objectives of the Seminar

The seminar had the following key objectives:

- **To introduce the concepts of low-temperature physics:** The seminar aimed to explain the fundamental principles of low-temperature physics, including the behaviour of matter at temperatures close to absolute zero.
- **To explore phenomena observed at low temperatures:** Participants were introduced to various phenomena that occur at low temperatures, such as superconductivity, superfluidity, and Bose-Einstein condensation.
- **To discuss the techniques used to achieve low temperatures:** The seminar aimed to familiarize students with the methods and technologies used to achieve and measure low temperatures, including cryogenics and refrigeration techniques.
- **To highlight the applications of low-temperature physics:** The seminar sought to demonstrate the practical applications of low-temperature physics in various fields, including quantum computing, magnetic resonance imaging (MRI), and space exploration.
- **To inspire further academic research and exploration:** The seminar aimed to encourage students to pursue further studies and research in low-temperature physics, fostering a deeper interest in the subject.

3. Summary of the Seminar

The seminar began with an introduction by Dr. M. Ratna Raju, Head of the Department of Physics, who welcomed the resource person, Mr. P. M. Prasad, and the participants, including the faculty members Dr. P. M. Vinaya Teja, Mr. V. Ravi Kumar, and Mr. D. Srinivasa Rao. Mr. Prasad commenced the session with a comprehensive overview of low-temperature physics, starting with an explanation of what low temperatures are and the significance of absolute zero.

Mr. Prasad delved into the unique behavior of matter at extremely low temperatures, discussing phenomena such as superconductivity, where materials exhibit zero electrical resistance, and superfluidity, where liquids flow without viscosity. He also touched on Bose-Einstein condensation, a state of matter that occurs at temperatures close to absolute zero, where particles occupy the same quantum state.

The seminar also covered the technological aspects of low-temperature physics, with Mr. Prasad explaining the various methods used to achieve low temperatures, including the use of liquid helium and advanced cryogenic systems. He provided insights into the challenges and innovations in the field of cryogenics and how these technologies are critical for scientific research and industrial applications.

One of the key highlights of the seminar was the discussion on the practical applications of low-temperature physics. Mr. Prasad illustrated how this field contributes to advancements in quantum computing, where qubits operate at near-zero temperatures to minimize decoherence. He also discussed the role of low-temperature physics in medical technologies, such as MRI, and its importance in space missions, where spacecraft components must operate in extremely cold environments.

Throughout the seminar, students and faculty engaged actively in discussions, with Mr. Prasad addressing questions and providing clarifications on complex topics. The interactive nature of the seminar helped to create a dynamic learning environment.

4. Outcomes of the Seminar

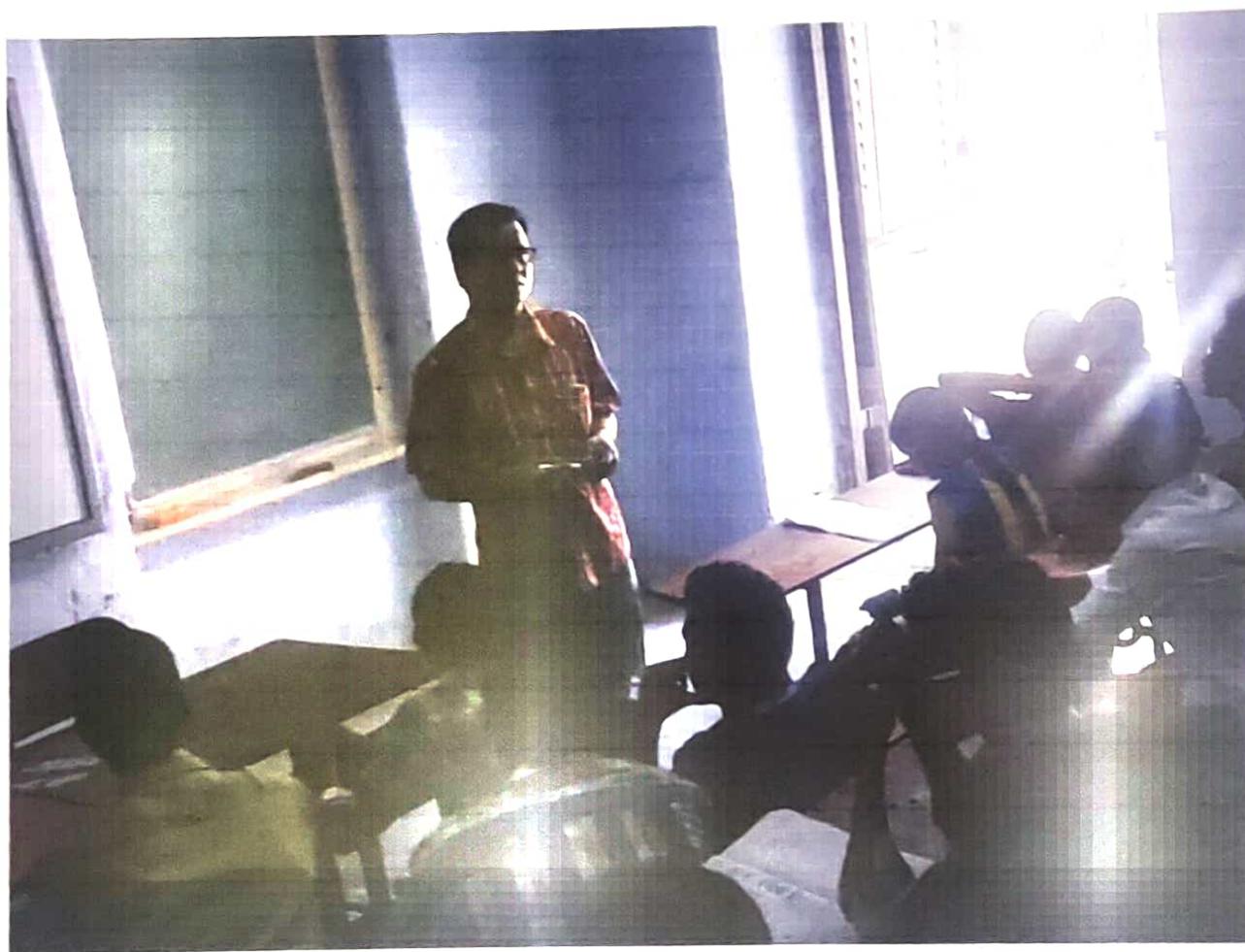
The seminar successfully met its objectives, resulting in the following outcomes:

- **Enhanced understanding of low-temperature physics:** Participants gained a solid understanding of the principles and phenomena associated with low-temperature physics, which is essential for their academic development in physics.
- **Awareness of advanced technologies:** Students were introduced to the cutting-edge technologies used to achieve and utilize low temperatures, broadening their knowledge of applied physics.
- **Increased interest in research opportunities:** The seminar sparked curiosity among students, encouraging them to explore research opportunities in low-temperature physics and related fields.
- **Improved faculty-student interaction:** The seminar facilitated closer interaction between students and faculty members, fostering a collaborative academic environment that supports inquiry and learning.

- **Recognition of practical applications:** Students became more aware of the real-world applications of low-temperature physics, helping them understand the relevance of their studies to various scientific and industrial sectors.

5. Conclusion

The seminar on "Low Temperature Physics" organized by the Department of Physics, Andhra Christian College, Guntur, was a highly informative and successful event. Mr. P. M. Prasad delivered an engaging presentation that effectively conveyed complex concepts in an accessible manner. The seminar achieved its objectives, providing participants with valuable insights and knowledge that will inspire further academic inquiry and exploration in the fascinating field of low-temperature physics.



Andhra Christian College, Guntur

Department of Physics

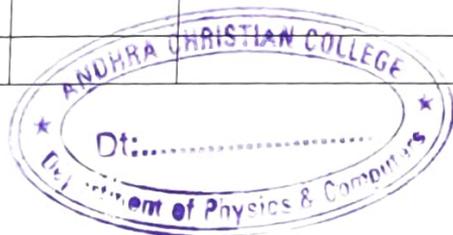
List of Students Attended for SEMINAR CLASS

TOPIC: Low Temperature Physics

Date: 15.09.2022

Class: IIIrd B.Sc

S. No.	Class No	Name of the Students	Signature
1.	601	B. Shyam Kumar	B. Shyam Kumar
2.	602	B. Naveen Kumar	B. Naveen Kumar
3.	603	G. Naga Raju	G. Naga Raju
4.	604	B. Naresh	B. Naresh
5.	605	M. Mahendra Babu	M. Mahendra Babu
6.	606	N. Gopi Naik	N. Gopi Naik
7.	608	N. Prem Babu	N. Prem Babu
8.	609	S. Revanth Siva	S. Revanth Siva
9.	610	M. Nageswara Rao	M. Nageswara Rao
10.	611	Nithin Chandra Reddy	Nithin Chandra Reddy.
11.	613	SK. Abid Hussain	SK. Abid Hussain
12.	614	B. Vijaya Varma	B. Vijaya Varma
13.	618	K. Murali	K. Murali
14.	620	M. Bharath Naik	M. Bharath Naik.
15.	621	SK. Meenavali	SK. Meenavali
16.	622	T. Jagadeesh	T. Jagadeesh
17.	623	K. Chaitanya	K. Chaitanya
18.	624	P. Raju	P. Raju
19.	625	Y. Prem Kumar	Y. Prem Kumar
20.	627	R. Ganesh	R. Ganesh
21.	628	T. Anil	T. Anil
22.	1403	G. Kinsingh	G. Kinsingh
23.	1404	M. Koteswar Rao	M. Koteswar Rao
24.	1411	S. Santhosh Kumar	S. Santhosh Kumar
25.	1415	N. Maheswar Reddy	N. Maheswar Reddy
26.	1417	K. Vyshnavi	K. Vyshnavi
27.	1420	G. Srinu	G. Srinu
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T. Jagadeesh
HOD
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